PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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BRITISH
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A Reconnaissance Survey Of Lost Lake

A. R. McLean
1993

PWFWCP Report No. 114

105-02834/

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

Citation: A. R. McLean. 1993. A reconnaissance survey of Lost Lake. Peace/Williston Fish and Wildlife Compensation Program, Report No. 114. 20pp plus appendices.

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A RECONNAISSANCE SURVEY OF

Lost Lake

WATERSHED: Parsnip

DATE OF SURVEY: June 11. 12 1993

FIELD CREW LEADER: A.R. McLean

FIELD ASSISTANT: B. Sterling

PEACE FISHERIES COMPENSATION PROGRAM

B.C. HYDRO

ENVIRONMENTAL AFFAIRS

and

B.C. ENVIRONMENT, LANDS AND PARKS

FISH AND WILDLIFE BRANCH

REPORT PREPARED BY: A.R. McLean

RELEASED BY: _____

D. Cadden, Regional Fisheries Biologist

LAKE: **Lost Lake**

SYSTEM NAME: --

A.S.A.P.REFERENCENO.:

SYSTEM NO: 230-9051-045 [03]

DATA ON FILE FOR THIS SURVEY

Location	x	Dissolved O2/Temp. Profiles	x
Physical Data	x	Winter Dissolved 02/Temp. Profiles	x
Bench Mark	x	Netting Record	x
Terrain Features	x	Lake Catch Summary	x
Access	x	Individual Fish Data	--
Resorts and Campsites	x	Fish Preserved	--
Other Developments	x	Stomach Analysis	--
Obstructions and Pollutions	x	Scale Reading	--
Special Restrictions	x	Location of Inventory Sites	x
Aquatic Plants	x	Photograph Directory	x
Wildlife Observations	x	Appendices:	
Miscellaneous Comments	x	A: Water Chemistry Analysis	x
Lake Drainage	x	B: Tributary Stream Data	--
Fisheries Management Comments	x	Bathymetric Map Reduction	x
History of Previous Surveys	x	Bathymetric Map	x
Water Chemistry Summary	x		

LOCATION

Location: approximately 2.5 km southeast of Mackenzie
Elevation: 716 m+/-
Latitude/Longitude: 55°19'47":123°02'55" U.T.M.: 10.4969.61313
Management Unit: 7-30 N.T.S. Map No.: 93 0/6 edition 2

Drainage: Internal

PHYSICAL DATA

Lake Drainage Area:	--	km^2	Volume:	575000	m^3
Water Surface Area:	96000	m^2	Flushing Rate:	--	
Area above 6 m contour:	52000	m^2	Perimeter of Islands:	n/a	
Shoreline Perimeter:	1600	m	Number of Islands:	0	
Maximum Depth:	15.2	m	Mean Depth:	6.0	m
Filterable Residue (TDS):	231	mg/l	Secchi Reading:	2.6	m

Sounding Device: Lowrance X-16 Elevation Source: contour interpolation

BENCHMARK

(Iron spike, center of red circle) located on the northeast shore, approximately 3.0 m from lakes edge in a 58 cm diameter spruce tree. Benchmark is set 2.0 m above current lake level.

High water mark: Lake appears to be at maximum pondage.

LAKE
MOUNTAIN
ROCHE
RANGES
RANG
MOUNT GARBITT
Garbitt
MOUNT MORFEE
Williston Lake Regional Park
Mackenzie
LOST LAKE
THABAH MOUNTAIN
PARSNIP FOREST
TRENCH
MOUNT SCOVIL
PLATEAU
PLATEAU
SKOG MOUNTAIN
PINLAY FORREST
CARP FORREST
LAVITAH MTN
Kennedy
Ospika Lake Provincial Park
MOUNT CHINGEE
SCALE 1: 250 000

Lake: **Lost Lake**

TERRAIN FEATURES

Immediate Shoreline:

The lake shore slope is steep on the north and west sides, and low to moderate on the east and south sides. Unidentified shrubs and conifers (spruce, hemlock) front the shoreline, with birch sparsely intermixed. Shoreline substrate consists mainly of cobble, with gravel and boulder intermixed. The lake bottom drops off sharply on the north and west sides and low to moderate on the east and south sides. A rough trail located off a 4 x 4 access road, joins the lake at the north northwest side. Boating access is fair, with the exception of the north and west sides.

Surrounding Country:

Lost Lake is surrounded by gently rolling terrain. Mountains are visible to the south and east. Forest cover is complete and mature, consisting of deciduous and coniferous species. Lost Lake is situated within the sub-boreal spruce biogeoclimatic zone.

Lake: **Lost Lake**

ACCESS

Directions:

From the junction of Centennial Blvd. and Mackenzie Blvd., proceed east on Centennial Blvd. for approximately 1.4 km. Turn left onto Morfee Lake Road and travel approximately 500 m to a gate located at the baseball diamonds. Proceed through the gate (locked at all times) and travel approximately 2 km to the lake access trail (lake clearly visible from road). Proceed approximately 25 m to lake edge.

Road Type and Conditions:

Mackenzie Blvd. (Hwy 39) is a paved 2 lane highway. Centennial Blvd. is a paved 2 lane street. Morfee Lake Road is a 2 lane all weather gravel road. The lake access road is a seasonal 4 x 4 road in fair condition.

Restrictions:

A locked gate located at the beginning of the lake access road inhibits vehicular travel. Key available at the District of Mackenzie office.

RESORTS AND CAMPSITES

None. However the remains of a picnic table is located in a semi-cleared area near the access trail.

Lake: **Lost Lake**

OTHER DEVELOPMENTS

None.

OBSTRUCTIONS AND POLLUTIONS

None.

SPECIAL RESTRICTIONS

None.

AQUATIC PLANTS

None noted.

WILDLIFE OBSERVATIONS

9 unidentified waterfowl (same species)

MISCELLANEOUS COMMENTS

Tadpoles were observed around the peripheral edge of the lake
Gammarus noted on net in low densities.
The Nordic Ski Club (Mackenzie) maintains the road/trails into and around the lake.

Bathymetric map: The lake outline is from an enlargement of aerial photograph BC 7327 No. 83, flown July, 1971.

Lake: **Lost Lake**

LAKE DRAINAGE

General:

Lost Lake has 3 seasonal inlets and no outlet.

Major Systems:

None.

Minor Systems:

The intermittent inlets were dry at time of survey and afford no spawning habitat.

Lake: **Lost Lake**

FISHERIES MANAGEMENT COMMENTS

Lost Lake is believed to be barren of all fish species. No fish were captured in one net set, and two minnow traps set overnight. The three intermittent inlets draining into the lake were dry at the time of the survey and afford no spawning habitat. However, suitable spawning substrate was noted along the lake shore. Gammarus were observed in low densities. Dissolved oxygen measurements taken during the winter of 1992/93 may not be sufficient to support a fish population. However, a maximum depth of 15.2 m was noted.

This lake may be suitable for a sport fish introduction. The lake could be promoted as hike/ski to fishery, as vehicular access is prohibited on the 2 km access road. If a winter fishery is desirable, brook trout introductions may be suitable, as they are able to shore spawn. Alternately, stocking with later maturing all female pennask rainbow trout is possible, as these trout would be available to the fishery for a longer period prior to becoming spawnbound.

HISTORY OF PREVIOUS SURVEYS

Lake Surveys:

A oxygen/temperature series was collected on March 2, 1994 by A.R. Langston and A.R. McLean, Peace Fisheries Compensation, Prince George, B.C.

Other Related Surveys:

None known.

Lake: **Lost Lake**

WATER CHEMISTRY SUMMARY **Limnology Station No. 1**

Field Conditions:

Date:	June 12, 1993		
Time:	1415 hrs	Air Temperature:	21.0 °C
Wind Velocity:	O km/hr	Wind Direction:	n/a
Cloud Cover:	5/10 o.c.	Surface Condition:	calm
Secchi Disc:	2.15m	Water Colour:	

*secchi disc lost - reading taken with eslon tape.

Method(s) Used:

Dissolved Oxygen:	YSI model 58 oxygen/temperature meter
Water Temperature:	YSI model 58 oxygen/temperature meter
Air Temperature:	Hand-held alcohol thermometer
pH (field):	Digital pH pocket tester
H2S (field):	Hach H2S field test kit
Laboratory Used:	Zenon Environmental Inc. B.C. Laboratory Services
Water Sampler:	Vertical Alpha Water Bottle (Vandorn)
Substrate Sampler:	Substrate sample not taken

Water Sample Chemistry: SEAM Site No.: not determined

	Sampling Depths			
	Surface (O m)		Lower (14.0 m)	
pH (field)	8.7		7.5	
pH (lab)	7.1		7.0	
Specific Conductance (lab)	81	umhos/cm	104	umhos/cm
Filterable Residue 105°C (lab)	57	mg/l	70	mg/l
H2S (field)	---	mg/l	3	mg/l
Bottom Depth:	15.5	m		
Substrate Sample Depth:	--	m		

*Hydrogen sulphide odour noted in bottom water sample.

Lake: **Lost Lake**

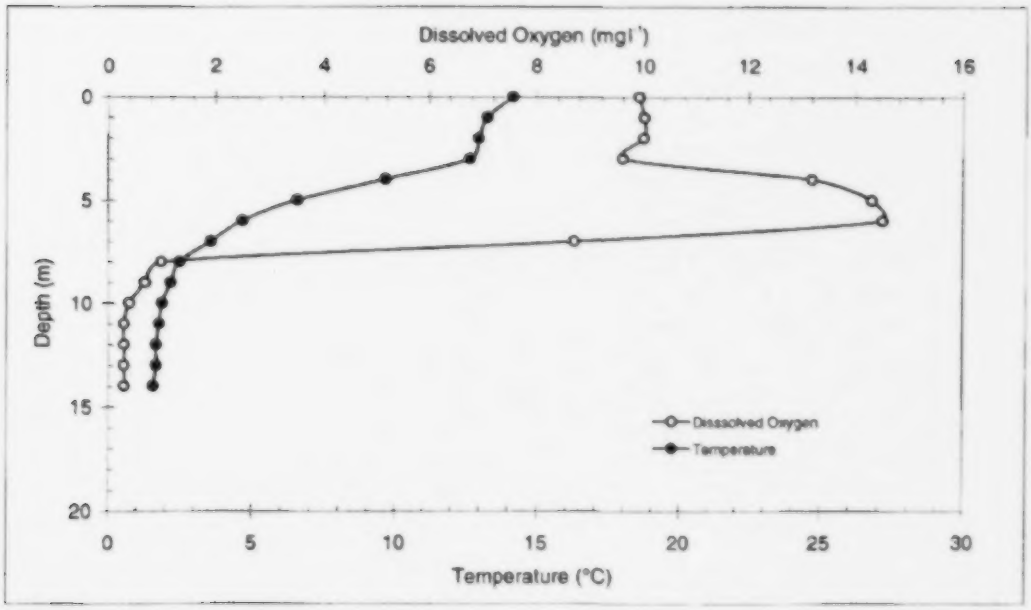
DATE: June 12, 1993

SUMMER OXYGEN/TEMPERATURE DATA

DEPTH (m)	02 (mg/l)	TEMP (°C)
0	9.9	14.2
1	10.0	13.3
2	10.0	13.0
3	9.6	12.7
4	13.2	9.7
5	14.3	6.6
6	14.5	4.7
7	8.7	3.6
8	1.0	2.5
9	0.7	2.2
10	0.4	1.9
11	0.3	1.8
12	0.3	1.7
13	0.3	1.7
14	0.3	1.6
15.5	bottom	

SUMMER

Dissolved Oxygen and Temperature Profiles



Lake: **Lost Lake**

WINTER OXYGEN/TEMPERATURE DATA

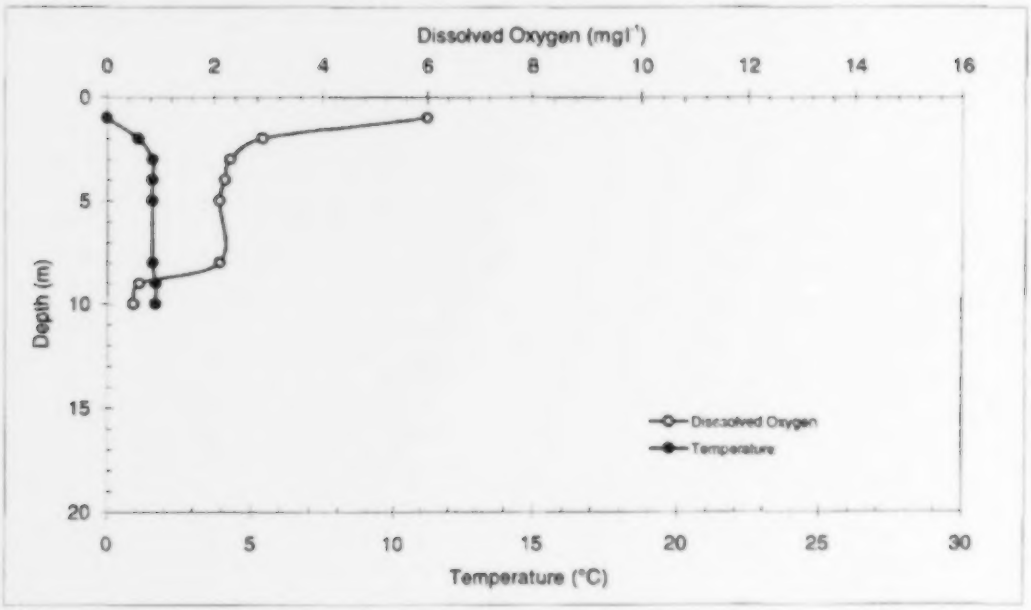
DEPTH (m)	02 (mg/l)	TEMP (°C)
*Surface		
1	6.0	0.0
2	2.9	1.1
3	2.3	1.6
4	2.2	1.6
5	2.1	1.6
8	2.1	1.6
9	0.6	1.7
10	0.5	1.7
13	bottom	

Date:	March 2, 1993	Crew:	A.R. McLean
Time:	1400 hrs		A.R. Langston
Air Temperature:		Snow Depth:	0 cm
Wind Velocity:	nil	Ice Depth:	74 cm
Weather:	clear		

*Surface is referenced from top of ice, i.e. surface=top of ice.

WINTER

Dissolved Oxygen and Temperature Profiles



Lake: **Lost Lake**

NETTING RECORD

Mesh sizes experimental order: 25, 76, 51, 89, 38, 64 mm

NETTING SITE #1

Type:	Sinking monofilament gill net		
Date Set:	June 11, 1993	Time:	1825 hrs
Date Lifted:	June 12, 1993	Time:	1200 hrs
Net Dimensions:	Length: 91.4 m	Depth:	2.4 m
Shallow End Mesh Size:	25 mm	Depth:	1.5 m
		Substrate:	gravel/cobble/ boulder
Deep End Mesh Size:	64 mm	Depth:	7.5 m
		Substrate:	?

Comments:

Gammarus noted on net.

LOCATION OF INVENTORY SITES
Figure: 1
Lake: Lost
Reference No.: B.C. 7327: 083
Reference Date: July, 1971
Scale: 1: 3000
3
LS 1
NS 1
1
2
Plate number, area, and direction
Point sample, number, and location
Bench mark
LS 1
Limno station location and number
0 - - - 0 NS 1
Netting site location and number
1
Stream flow direction and number

PHOTOGRAPH DIRECTORY

Negative #	Plate #	Description
R1:7A8A	1	Panoramic view north, taken from middle of lake. Arrow indicates access trail.
R1: 9A, 10A	2	Panoramic view south, taken from middle of lake.
R1: 11A	3	View of access trail at north north west end of lake. Arrow indicates access trail. Access road at crest of hill.

Lake: Lost Lake

Plate 1: Panoramic view north, taken from middle of lake. Arrow indicates access trail.

Lake: Lost Lake

Plate 2: Panoramic view south, taken from middle of lake.

Lake: **Lost Lake**

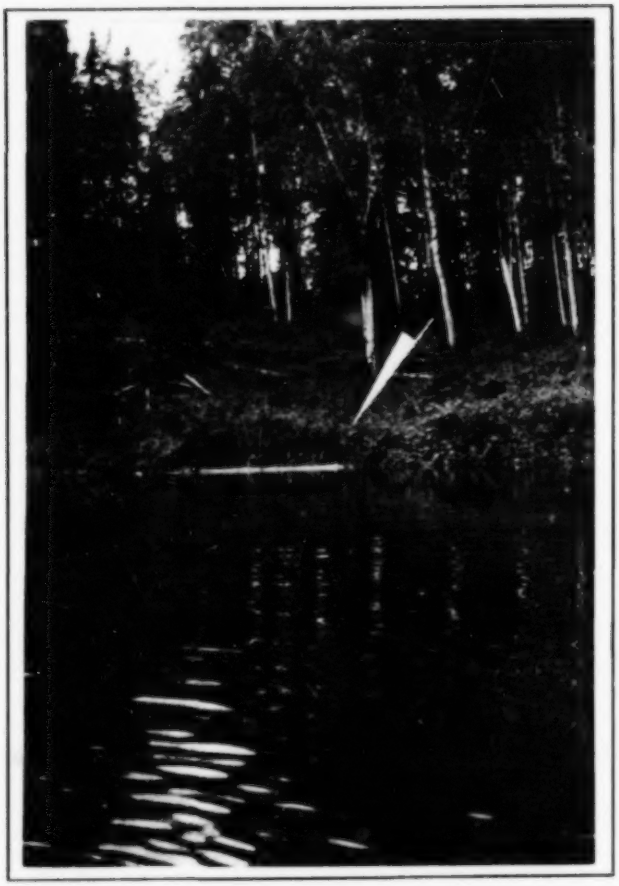


Plate 3: View of access trail at north north west end of lake. Arrow indicates access trail. Access road at crest of hill.

Appendix A

LABORATORY REPORT

Water Chemistry Analysis

ZENON ENVIRONMENTAL LABORATORIES
Certificate of Analysis

Reported To :

FISH - PRINCE GEORGE Client Code BD

Waste Management Branch
Northern Region
3rd Floor, 1011 4th Avenue
Prince George, BC V2L 3H9

Submitted By : BLACKMAN B
FAX : FISHERIES

Requisition Forms :

Zenon ID

Form 10016182 received on 15-JUN-1993 completed on 3-JUL-1993 containing sample(s) 93012025
93012026

From sampling site NOSITE LOST LK

Remarks :

- All results are blank corrected except for Hi-Res MS data.
- 'MDC' = Minimum Detectable Concentration
- ' < ' - Less than MDC
- '---' = Not analyzed
- Solids results are based on dry weight except Volatile Organics, TPH and Biota Analyses.
- Organic analyses are not corrected for surrogate recoveries except for Isotope Dilution methods.

Methods used by Zenon are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 17th Edition, published by the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the B.C. Ministry of Environment.

ANALYTICAL REPORT
Form 10016182

Sampling site : NOSITE LOST LK
Submitted by : BLACKMAN B

Zenon ID : 93012025

Sparcode	Parameter		Unit	MDC	Media	Workroute
00041220	pH	7.1	pH units	1.0	02/01	Automated pH Meter
00111160	Specific Conductance	81	uS/cm	1	02/01	Cond. Meter Siebold
00081071	Residue Nonfilt.	< 4	mg/L	4	02/01	Grav; Subsamp Buch 105C
00711033	Res. Filterable 1.0u	57	mg/L	4	02/01	Grav 1.0 um Filter
01021210	Alkalinity Total 4.5	33.8	mg/L	0.5	02/01	Automated Electrometer

Sample State : Fresh Water
Sampled on : 93/06/12 00:01

ANALYTICAL REPORT
Form 10016182

Sampling site : NOSITE LOST LK
Submitted by : BLACKMAN B

Zenon ID : 93012026

Sparcode	Parameter		Unit	MDC	Media	Workroute
00041220	pH	7.0	pH units	1.0	02/01	Automated pH Meter
00111160	Specific Conductance	104	uS/cm	]	02/01	Cond. Meter Siebold
00081071	Residue Nonfilt.	6	mg/L	4	02/01	Grav; Subsamp Buch 105C
007H1033	Res. Filterable 1.0u	70	mg/L	4	02/01	Grav 1.0 um Filter
01021210	Alkalinity Total 4.5	45.9	mg/L	0.5	02/01	Automated Electrometer

Sample State : Fresh Water
Sampled on : 93/06/12 00:02
Upper Depth : 14.0
Lower Depth : 14.0

DETAILED BILLING
Form 10016182

Sparcode or PKG	Parameter	Secop	Operation	WKU	Price (Regular)	# of tests	Total-per-item WKU	Cost
00041220	pH	4401	pH Meter	3	$3.86	YY.... 2	6	$7.71
00111160	Specific Conductance	4404	Cond.Meter Siebold	5	$6.43	YY.... 2	10	$12.85
00081071	Residue Nonfilt.	4424	Grav. Buch. 9cm 105C	14	$17.99	YY.... 2	28	$35.98
007H1033	Res. Filterable 1.0u	4429	Filt 1.0u Grav 105C	14	$17.99	YY.... 2	28	$35.98
01021210	Alkalinity Total 4.5	4402	Auto.Pot.Tit.St.Acid	11	$14.13	YY.... 2	22	$28.27
						Total for form 10016182 is	94	$120.79

Client code BD : FISH - PRINCE GEORGE
Client type : Ministry contract.
Sampling Site : NOSITE LOST LK
Submitted by : BLACKMAN B

This form, entered on 15-JUN-1993 11:15 has been completed on 3-JUL-1993 00:34
The following records have been entered in the charging file :

93-07-03 3R1 BD $120.79 Form 10016182 94 44 - For General Services

Lake: Lost Lake

LAKE CATCH SUMMARY

SPECIES	NET SITE NO.				ANGLED	OTHER	TOTAL	NUMBER SAMPLED	NUMBER PRESERVED	SIZE RANGE (CM)
	1	2	3	4						
Nil										

Minnow Traps:

BAIT: Sardines

#	HOURS	DEPTH (m)	SUBSTRATE	SPECIES	SIZE RANGE (cm)
1	16.2	0.8	organics/cobble	24 leeches 2 water beetles	--
2	15.9	0.4	organics/cobble	6 leeches 2 water beetles	--

NOTES: 1. Contour interval is 2 metres. 2. Elevations based on Mark B. 3. Not to be used for navigation. Use charted data and sounding only.

SURVEYED BY A.R. McLEAN DATE: June 18, 1982
OUTLINE DRAWN FROM Plan BC 7327-063 (Jan 1971)

STATISTICS AT TIME OF SURVEY

Elevation	718 m ±
Surface Area	[illegible] sq. m.
Area above 8m contour	[illegible] sq. m.
Volume	[illegible] cu. m.
Mean depth	[illegible] m.
Maximum depth	6.1 m.
Perimeter Main Shore	[illegible] m.
Perimeter Islands	m.
Bench Mark height	2.0 m.

Ministry of Environment, Lands and Parks

FISHERIES BRANCH
CONSERVATION SECTION

LOST LAKE ★

Scale 1:1200

Drawing No. 930/6